

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Materials Laboratory Division
Washington, D.C. 20594



November 3, 2006

MATERIALS LABORATORY FACTUAL REPORT

Report No. 06-088

A. ACCIDENT

Place : Boston Harbor, Massachusetts
Date : June 12, 2006
Vehicle : M/V Massachusetts
NTSB No. : DCA06FM016
Investigator : Brian Curtis OMS

B. COMPONENTS EXAMINED

Turbocharger and fuel oil jumper line with surface fittings.

C. DETAILS OF THE EXAMINATION

Fuel lines

The fuel oil jumper line with surface fittings was submitted for examination. The jumper line was found disconnected from the nipple connector at the time of the on-scene investigation. An exemplar line from the same engine was also received. Reportedly, the engine had undergone maintenance just prior to the accident. The threads on the nut and nipple connector of the unconnected line showed no mechanical damage. The threads of the nipple connector and nut end had areas of oxidation and debris trapped within the threads. Oxidation and debris were also found inside the nipple connector. The connected line showed no evidence of oxidation or debris contamination. Figures 2 and 3 compare the nipple ends of the fuel lines.

Turbocharger

The aluminum exterior surface of the turbocharger was dull and powdery. The cover was removed from the intake side of the turbocharger for further examination. The aluminum impeller on the intake side of the turbocharger exhibited similar heat as the exterior cover. There were also areas of melting and pitting along the edges of the blades. There were no indications of mechanical damage on either the cover or the impeller. The EDS analysis on material removed from the surface of the cover and the impeller blades found the material to consist largely of aluminum and oxygen.

Nancy B. McAtee
Chemist



Image No.:0607A00234, Project No.: 2006070004

Figure 1. Overall of fuel lines and turbocharger. Exemplar at top left.

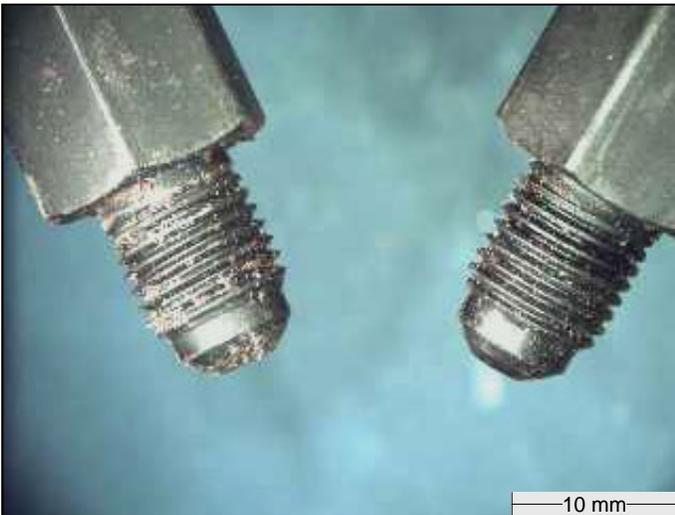


Image No.:0609A00322, Project No.: 2006070004

Figure 2. Fuel line connectors, nipple ends. (Disconnected line on the left; connected exemplar line on the right)



Image No.:0609A00323, Project No.: 2006070004

Figure 3. Close up of fuel line connectors- nipple ends. (Disconnected line on the left; connected exemplar line on the right)



Image No.:0609A00325, Project No.: 2006070004

Figure 4. Close up of disconnected fuel line connector nipple showing the interior debris.



Image No.:0609A00327, Project No.: 2006070004

Figure 5. Close up of fuel line connectors- nut ends. (Unconnected line on the left; connected exemplar line on the right)



Image No.:0609A00335, Project No.: 2006070004

Figure 6. Turbocharger intake impeller



Figure 7. Turbocharger-Inside of intake cover

Image No.:0609A00339, Project No.: 2006070004